



November 2007  
Issue 2



## A MESSAGE FROM THE STMS PRESIDENT

The tennis-edition of the British Journal of Sports Medicine has been released and is now available on the STMS website. This tennis specific issue is the second of its kind for the British Journal and has some of the latest research from around the world on the topics of sports medicine and science in tennis.

Don't miss out on this and many other benefits of being a member of the Society of Tennis Medicine and Science. Renew your membership for

2008 by logging on to the newly updated and refurbished STMS website at [www.stms.nl](http://www.stms.nl). From there you will find the latest information and a link with payment options for renewing your membership. This now includes a link to use major credit cards to ease the process of membership renewal.

Please feel to contact the member of the STMS board if you have questions about your membership renewal or benefits.

Also, remember to make plans to attend the 10th STMS World Congress which will be held from October 2 – 4, 2008 in Tokyo, Japan.

Hope to see you at the 10th Annual STMS World Conference in Tokyo!!!

Sincerely,

Marc Safran, MD  
President

### Special Points of Interest

- World Conference 2008
- Journal Reviews
- Abstract Discussion
- Course Report



## British Journal of Sports Medicine; tennis edition 2007

In 2006, the British Journal of Sports Medicine, one of the leading sports medicine journals in the world, has dedicated a whole issue to the medical aspects of tennis. Twenty eight quality articles were written by various authors. Exercise physiology, physical aspects, health issues and sports injury topics are discussed. STMS members can read the full content in the membership area on the [www.stms.nl](http://www.stms.nl) website.

Non-members can at least read one sound review on the STMS website; health benefits of tennis, a review about... well, this should be obvious...!

Everything you want/need to know about medical aspects of tennis is just one click away.

[www.stms.nl](http://www.stms.nl)

## Book Review

### THE KNEE: DIAGNOSIS, THERAPY AND REHABILITATION

Injuries to the knee joint are among the most common in sports medicine. The authors present the latest diagnostic methods and the criteria for conservative and operative treatment of these injuries. They emphasise the close cooperation that is needed between the sports physician, the orthopaedic surgeon and the physiotherapist. Only close collaboration can produce the best possible result and a rapid return to sport.

Daily communication between the health care providers ensures that the individual rehabilitation programme can be rapidly adapted to optimise the patient's recovery and reduce the risk of complications.

This book provides sound and intelligent advice for doctors, physiotherapists and patients (both professional and amateur athletes and non-athletes). All medical terms, diagnostic procedures and

therapeutic measures are carefully explained. An extra bonus is a CD containing details of the many exercises outlined in the text.

**Das Knie Diagnostik- Therapie- Rehabilitation**  
**Rudolph Schabus and Elisabeth Bosina**  
 Springer Verlag, 2007  
 Pages: 164  
 Price; EUR 99,95  
 ISBN: 978-3-211-29686-8  
[www.spinger.com](http://www.spinger.com)



## Authors

**University Professor Dr. Rudolf Schabus** was born in Hermagor/Kärnten in 1954 and studied medicine in Vienna (1973-1978). He went on to specialise in traumatology at the University Clinic for Traumatology, Vienna (1979-1985) and received certification as a sports physician in 1990. He is currently the Head of the Dept. of Traumatology and Sports Injuries in the Wiener Privatklinik.

**Elisabeth (Lisi) Bosina** was born in Vienna in 1959 in Vienna and after qualification as a physiotherapist went on to specialise in sports physiotherapist. In 1989, she worked in private practice in Vienna and shortly after the completion of this book, in 2005, was tragically killed in an avalanche accident.

## Abstract Discussion



Maarten Moen  
Registrar in Sports Medicine  
The Netherlands

So if you just got the hang of reading articles after finishing the newest British Journal of Sports Medicine here are some more interesting articles of the last couple of months.

This first abstract discusses the contributions of upper limb joint movements to horizontal racket head velocity at ball impact during tennis serving, various authors have discussed this subject in the past. Internal rotation of the

shoulder seems a clear and important component, less consent exists about the contribution of wrist palmar flexion and pronation of the lower arm.



### **Tanabe S and Ito A.** **Sports Biomech 2007; 6(3): 418-433**

In this study, the relationship between upper limb joint movements and horizontal racket head velocity were examined to clarify joint movements for developing racket head speed during tennis serving. Sixty-six male tennis players were videotaped at 200 Hz using two high-speed video cameras while hitting high-speed serves. The contributions of each joint rotation to horizontal racket velocity were calculated using vector cross-products between the angular velocity vectors of each joint movement and relative position vectors from each joint to the racket head. Major contributors to horizontal racket head velocity at ball impact were shoulder internal rotation (41.1%) and wrist palmar flexion (31.7%). The contribution of internal rotation showed a significant positive correlation with horizontal racket head velocity at impact ( $r = 0.490$ ,  $P < 0.001$ ), while the contribution of palmar flexion showed a significant negative correlation ( $r = -0.431$ ,  $P < 0.001$ ). The joint movement producing the difference in horizontal racket head velocity between fast and slow servers was shoulder internal rotation, and angular velocity of shoulder internal rotation must be developed to produce a high racket speed.

The next abstract discusses echocardiographic characteristics of professional tennis players at the Roland Garros French Open. Very few studies focused on cardiac characteristics in tennis players. This is the first study to have a prospective design.

### **Mansencal N, Marcadet DM, Martin F, Montalvan B and Dubourg O.** **Am Heart J 2007; 154(3): 527-531**

Intensive sport may induce cardiac modifications. No recent study has been performed in elite tennis players. The aim of this cross-sectional study was to analyze the cardiac characteristics in a population of professional tennis players. During the 2004 French Open Tennis Tournament, complete echocardiographic screening was offered to all professional tennis players. The study population consisted of 160 subjects: 80 tennis players (50 men and 30 women) and age- and sex-matched control groups ( $n = 80$ ).

Indexed left ventricular mass was significantly higher in tennis players ( $P < .0001$ ). Left ventricular hypertrophy was present in 18 male (36%) and 6 female (20%) tennis players versus 2 men (4%) and no woman in the control groups ( $P < .0001$  and  $P = .02$ , respectively). All indexed right and left atrial measurements were significantly higher in tennis players ( $P < .003$ ). The incidence of left and right atrial dilation was significantly higher in tennis players ( $P < \text{or} = .0001$ ). Indexed right atrial area and left atrial volume were significantly higher in baseline players as compared with offensive players and to control groups ( $P < .0001$ ), whereas there was no significant difference in left ventricular mass according to the style of play ( $P > .75$ ). No significant between-group difference was observed in Doppler data.

In the present study, professional tennis players presented significant cardiac differences, as compared to a control group, with moderate left ventricular hypertrophy, bilateral atrial dilation, and normal systolic and diastolic functions. Atrial dilation is related to the style of play (baseline or offensive) and should be considered as physiological in tennis players.

This last article discusses the influence of restricted knee motion during the flat first serve in tennis. Often, tennis coaches think bending of the knees in tennis is mainly for liftoff so corners of the service box are more easily reached. This article shows that even in the beginner level bending of the knees increases speed of the tennis serve.

### **Girard O, Micallef JP and Millet GP.** **J Strength Cond Res 2007; 21(3): 950-957**

The aim of this study was to examine the influence of restricted knee motion during the serve in tennis players of different performance levels. Thirty subjects distributed in 3 groups (beginner, B; intermediate, I; elite, E) performed 15 flat first serves with normal (normal serve, S(N)) and restricted (restricted serve, S(R)) knee motion. In S(R), the legs were kept outstretched by L(imsplints with a knee joint angle fixed at 10 degrees (0 degrees fully extended) to prevent any knee flexion/ extension. Vertical maximum ground reaction forces ( $F_z(\text{max})$ ), ball impact location ( $L(\text{impact})$ ), and ball speed ( $S(\text{ball})$ ) were measured with force platform, video analysis, and radar, respectively.  $F_z(\text{max})$ ,  $L(\text{impact})$ , and  $S(\text{ball})$  were higher ( $p < 0.001$ ) in S(N) than in S(R).  $S(\text{ball})$  was significantly ( $p < 0.001$ ) dependent on performance level, with higher values recorded in E than in B or I. From S(R) to S(N), increase in  $L(\text{impact})$  was greater ( $p < 0.01$ ) in E than in other groups and increases in  $F_z(\text{max})$  and  $S(\text{ball})$  were correlated ( $r = 0.69$ ,  $p < 0.01$ ) in E only. Knee motion is a significant contributor to serving effectiveness whatever the performance level. Skilled players perform faster serves than their less skilled counterparts, and this is partly related to a more forceful lower limb drive.

# UPCOMING CONFERENCES

## International Congress on Tennis Medicine and Science

Brazil

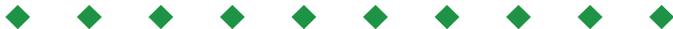
It is our pleasure to announce that NEO (Orthopedic Sports Medicine Research Center) and the Medical Committee of the Brazilian Tennis Confederation are organizing an International Congress on Tennis Medicine and Science, in Brazil, at the wonderful Rio Quente Resorts (www.rioquente.com). It will be held in Goiania, central region of Brazil, from June 12th to 15th, 2008.

“It will be a very interesting meeting, focused on medicine, physical therapy and specific tennis topics”, said Dr. Rogerio Teixeira Silva, MD, PhD, the president of the congress. Dr. Silva also pointed out that it will be a fantastic opportunity to share knowledge on tennis medicine and science, and also a nice time to have fun. The Rio Quente Resorts are 1 hour by plane from Sao Paulo and are famous for their natural hot water (coming from rocks) and their gorgeous swimming pools.

“The congress will be a great opportunity to be here in Brazil with your family, because we will also provide clinics for juniors and beginners tennis players, with former professional players”, emphasized Dr. Silva.

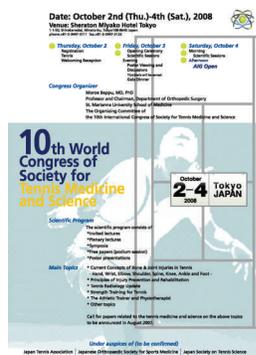
If you are interested in attending, please email: [rgtsilva@uol.com.br](mailto:rgtsilva@uol.com.br)

**Rogerio Teixeira Silva, MD, PhD**  
*Orthopedics and Sports Medicine*  
NEO – Orthopedic Sports Medicine Research Center  
Chief Medical Officer – Brazilian Tennis Confederation  
Tel: 55.11.55495581 / 55.11.81716767



## 10<sup>th</sup> Annual World STMS Conference

Tokoyo



## 10th World Congress of the Society for Tennis Medicine and Science

October 2nd - 4th 2008

Sheraton Miyako Hotel Tokyo

Call for paper announced in September 2007

URL <http://www.icstms2008.jp>

e-mail: [office@icstms2008.jp](mailto:office@icstms2008.jp)



## MISSION STATEMENT

To disseminate current and practical tennis-related medical and scientific information to all our stakeholders (players, coaches, health care professionals, scientists, and tennis organizations) in order to optimize the health and performance of tennis players world-wide.

# Course Report



## Argentine Tennis Association Medical Department Instructional Course "Core Stability: The Role of the Trunk in Athletic Function"

The Sports Medicine Department of the Argentine Tennis Association organised an instructional course on "Core Stability" on 30<sup>th</sup> November in Buenos Aires. Eighty-five attendants completed the places available of this international scientific meeting.

The guest speakers included STMS members **Carl Petersen, PT (Vancouver, Canada)** and **Dr. Javier Maquirriain (Buenos Aires, Argentina)**. Carl Petersen PT is director of City Sports & Physiotherapist Clinic and author of "Fit to Play Tennis" in book and DVD format. Javier Maquirriain, MD is the director of Argentine Tennis Association Medical Dept and Vice-President of STMS.

**Dr. Javier Maquirriain** opened the course through a presentation on the theoretical issues of Core Stability. The lecture included the current concepts of anatomy, physiology, biomechanics, clinical evaluation, dysfunction and rehabilitation related to core stability.

Afterwards, Carl Petersen, PT covered the practical aspects of core stability and its relevance in tennis performance. The lecture included an historic perspective of core stability, its current tri-dimensional approach, functional training with special focus on children players and "on the road" training. DVD and practical demonstration of core exercises caught the audience attention composed by coaches, trainers, physiotherapists and sports physicians.

Finally, Carl Petersen, PT was honoured for his valuable contribution on coaches and physiotherapists education. **Dr. Gaston Gaudio**, 2004 French Open Champion gave him the diploma.

Sponsored by *Total Magnesiano ñ* (Temis Lostaló) and *Tennis Point Academy*



From left to right: Dr Javier Maquirriain, Gaston Gaudio and Carl Petersen



## STMS Members Speak at 15th ITF Worldwide Coaches Conference *Paraguay*

The ITF held its 15th Worldwide Coaches Conference in Asuncion Paraguay October 22-28 at the Hotel Resort Yacht Y Golf Club just outside the capital city. This event which is held every two years and was attended by tennis coaches from around the world and features many speakers who are members of the STMS.

The theme of the conference was "An Integrated Approach to Coaching Advanced Players" which included many talks on sports medicine and science and how these principles can be applied to coaching and enhancing performance of elite players. Also held at the conference was a meeting of the ITF Sport Science and Medicine Commission. STMS members from across the globe served as speakers and exchanged information at this extremely informative meeting.

Todd S. Ellenbecker, DPT, MS, SCS, OCS, CSCS  
Clinic Director, Physiotherapy Associates Scottsdale Sports Clinic



Conference Organizer Dr. Miguel Crespo and Prof. Bruce Elliott